

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Status of Claims:

No claims are currently being added or cancelled.

Claim 1 is currently being amended.

This amendment and reply amends claims in this application. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claims remain under examination in the application, is presented, with an appropriate defined status identifier.

After amending the claims as set forth above, claims 1-15 are pending in this application.

Telephone Interview Conducted on September 8, 2008:

Applicants' representative appreciates the courtesies extended to him by Examiner Blan during the telephone interview conducted on September 8, 2008, in which the Shen reference and claim 1 were discussed, as well as other features regarding possible new dependent claims to better distinguish over Shen.

Claim Rejections - Prior Art:

In the Office Action, claims 1, 4, 5, 7 and 9-10 were rejected under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,797,188 to Shen et al.; claim 2 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. in view of U.S. Patent Publication No. 2002/0050486 to Ishii et al.; claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. in view of U.S. Patent No. 2001/0035130 to Ishii et al.; claim 6 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. in view of U.S. Patent Publication No. 2001/0010228 to Au et al.; claim 11 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. in view of U.S. Patent Publication No. 2002/0047203 to Akahori et al.; claim 12 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. in view of U.S. Patent No. 6,581,612 to Loewenhardt et al.; and

claims 13-14 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Shen et al. and Loewenhardt et al. and further in view of Au et al. These rejections are traversed with respect to the presently pending claims under rejection, for at least the reasons given below.

Presently pending independent claim 1 now recites, among other things:

a gas introducing step of introducing a cleaning gas into said processing container from a location adjacent to said microwave transmissive window at a particular time corresponding to cleaning of said substrate processing apparatus,

a plasma exciting step of introducing a microwave into said processing container from said microwave antenna through said microwave transmissive window at the particular time to thereby excite a plasma in said processing container, said plasma disassociating said cleaning gas, and

a bias applying step of applying a high-frequency power to said holding stage from said high-frequency power supply at said particular time to raise a potential of said plasma in said processing container.

First, please note that the claimed bias applying step applies a high-frequency to the holding stage from a high-frequency power supply. In its rejection of claim 1, page 3 of the Office Action asserts that column 5, lines 5-14 and 45-47 of Shen describes a bias applying step as claimed. Applicants respectfully disagree. Namely, column 5, lines 5-14 and 45-47 of Shen describe biasing a process gas, whereby this has nothing at all to do with biasing a holding stage by way of a high-frequency power supply.

Still further, claim 1 now recites that a cleaning gas is introduced into a processing chamber from a location adjacent to said microwave transmissive window at a particular time corresponding to cleaning of said substrate processing apparatus. The timing and location features recited in this gas introducing step are not disclosed or suggested by Shen.

Also, claim 1 now recites a plasma exciting step of introducing a microwave into said processing container from said microwave antenna through said microwave transmissive window at the particular time to thereby excite a plasma in said processing container, said plasma disassociating said cleaning gas. The timing and location features of this plasma exciting step are not disclosed or suggested by Shen.

Lastly, claim 1 now recites a bias applying step of applying a high-frequency power to said holding stage from said high-frequency power supply at said particular time to raise a potential of said plasma in said processing container. The timing and “plasma potential raising” features of the bias applying step are not disclosed or suggested by Shen. Note also that the bias applying step is performed at the particular time, which is the same time that the other two steps are performed.

Still further, claim 1 now recites that only the cleaning gas and not the process gas is introduced into said processing chamber at the particular time.

Columns 4 and 5 of Shen describes that a first process gas is applied to a chamber containing a substrate, whereby a bromine-containing gas is not included in the first process gas. This non-use of bromine provides “better cleaning efficiency and to etch the compositionally different regions at similar etch rates,” as explained in column 4, lines 54-55 of Shen. Then, a second process gas is applied to the chamber, whereby the second process gas does include bromine, and whereby the second process gas etches the substrate in a different manner, and whereby the second process gas does not provide for a good cleaning efficiency. See column 4, lines 62-67 of Shen. Thus, in both the first and second process gas applying steps of Shen, the substrate is being etched (and the chamber is also being cleaned in the first process gas applying step), which is something that does not occur in the present invention as according to claim 1.

Accordingly, since none of the other cited art of record rectifies the above-mentioned deficiencies of Shen, presently pending independent claim 1 is patentable over the cited art of record.

Conclusion:

Since all of the issues raised in the final Office Action have been addressed in this Amendment and Reply, Applicants believe that the present application is now in condition for allowance, and an early indication of allowance is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment,

to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741.

If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorize payment of any such extensions fees to Deposit Account No. 19-0741.

<p>Date <u>September 9, 2008</u></p> <p>FOLEY & LARDNER LLP Customer Number: 22428 Telephone: (202) 945-6014 Facsimile: (202) 672-5399</p>	<p>Respectfully submitted,</p> <p>By <u>Phillip J. Aricola</u></p> <p>George C. Beck Registration No. 38,072</p> <p>Phillip J. Aricola Registration No. 38,819</p>
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